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EXAMINER

STAHL, MICHAEL J

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/812,019

Applicant(s)

TIRLONI, BARTOLOMEO ITALO

Examiner

Mike Stahl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-67 is/are allowed.
- 6) ☒ Claim(s) 68 and 69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 02 May 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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This office action is in response to the amendment filed 2 May 2003. The changes to the claims have been entered. All claim objections and rejections made in the last office action are withdrawn in view of the amendment. Claims 35-69 are pending.

Drawings

The proposed drawing changes submitted 2 May 2003 are approved.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 68 and 69 are rejected under 35 U.S.C. 102(e) as being anticipated by Judy et al. (US 5905838).

Judy discloses a single mode fiber (fig. 7A) including a glass core having a central cross-sectional area 70 with a first index peak, an outside ring 72 with a second index peak, and an intermediate region 71 between the first and second peaks with an index lower than that of the first and second index peaks. The fibers taught by Judy have a cut-off wavelength less than 1310

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nm (col. 5 lines 13-18) or even 1250 nm (Table in col. 8). It is assumed that the fig. 7A example shares this property. Fig. 7B is a dispersion plot for the fig. 7A fiber, and shows that this fiber has a dispersion at 1450 nm exceeding 1.5 ps/nm/km and a very low dispersion slope at 1550 nm. In particular, it is asserted that the fig. 7A fiber conforms to the specifications of the Table in col. 8, which require that the dispersion slope at 1550 nm is no higher than 0.05 ps/nm²/km (which is within the range set forth in claim 68). Finally, although the specific example of fig. 7A is depicted as having an effective area of 47 μm^2 at 1550 nm, it is noted that Judy contemplates fibers having an effective area of up to 50 μm^2 (col. 7 lines 20-31), which touches the range set forth in claim 68. It is asserted that the index profile of fig. 7A is merely exemplary, and that Judy's disclosure embodies a fiber having a profile which is strongly similar to fig. 7A but which is very slightly modified to achieve a 50 μm^2 effective area.

As to claim 69, the intermediate region 71 in the fig. 7A profile includes an index depression.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 68 and 69 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Judy et al. (cited above).

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In the event applicant disagrees with the examiner's assertion above that the Judy disclosure encompasses a fiber having an effective area of $50 \mu\text{m}^2$ and still having the other properties of claim 68 (e.g. as demonstrated by the fig. 7A example), the following alternative grounds for rejection are offered. The fig. 7A profile has an effective area of $47 \mu\text{m}^2$, which is close to $50 \mu\text{m}^2$. The profile would have to be modified only slightly to achieve an increase to $50 \mu\text{m}^2$. It is asserted that the slight modification needed to increase the effective area would not push the other recited properties outside the ranges set forth in claim 68. As to motivation, it is well known that undesirable nonlinear effects can be decreased by increasing the effective area of the fiber (see e.g. col. 7 lines 24-26). Thus it would have been obvious to a person of ordinary skill in the art to modify the fig. 7A profile slightly to increase the effective area at 1550 nm, while not increasing it to the extent that performance at 1310 nm is unacceptably diminished. The proposed modification would have satisfied claims 68 and 69. Moreover, it is noted that the value of $50 \mu\text{m}^2$ appears to be merely nominal (coming from Table 1 of the specification). Applicant has not disclosed any significance to this particular value, nor any reason why an effective area of $50 \mu\text{m}^2$ is unexpectedly better than a slightly different value (say, $47 \mu\text{m}^2$).

Allowable Subject Matter

Claims 35-67 are allowed. Claims 59-67 were allowed in the last office action. Applicant amended independent claims 35 and 54 to recite that the third layer is adjacent to the second layer. In the previously applied Fotheringham reference, the only layer which meets the requirements for the third layer is the layer which is designated 11 in fig. 8. The layer which was taken as the second layer in the rejection is clearly not adjacent to the third layer. The layer

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which is interior of and immediately adjacent to the third layer has a width which exceeds the requirements of claims 35 and 54. Claims 36-53 and 55-58 are allowable by dependence from claims 35 and 54 respectively. In summary, none of the prior art references of record teaches or discloses a fiber which satisfies all the limitations of claims 35-67.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

The references made of record and not relied upon are considered pertinent to applicant's disclosure. US 6266467 and US 6535675 are not available as prior art but disclose fibers similar to those of the present application.

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Any inquiry concerning this communication should be directed to Mike Stahl at (703) 305-1520. Official communications eligible for submission by facsimile may be faxed to (703) 308-7724 or (703) 308-7722. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at (703) 308-0956 or to the technical support staff supervisor at (703) 308-3072.

MJS

Michael J. Stahl
Patent Examiner
Art Unit 2874

4 July 2003


HEMANG SANGHAVI
PRIMARY EXAMINER